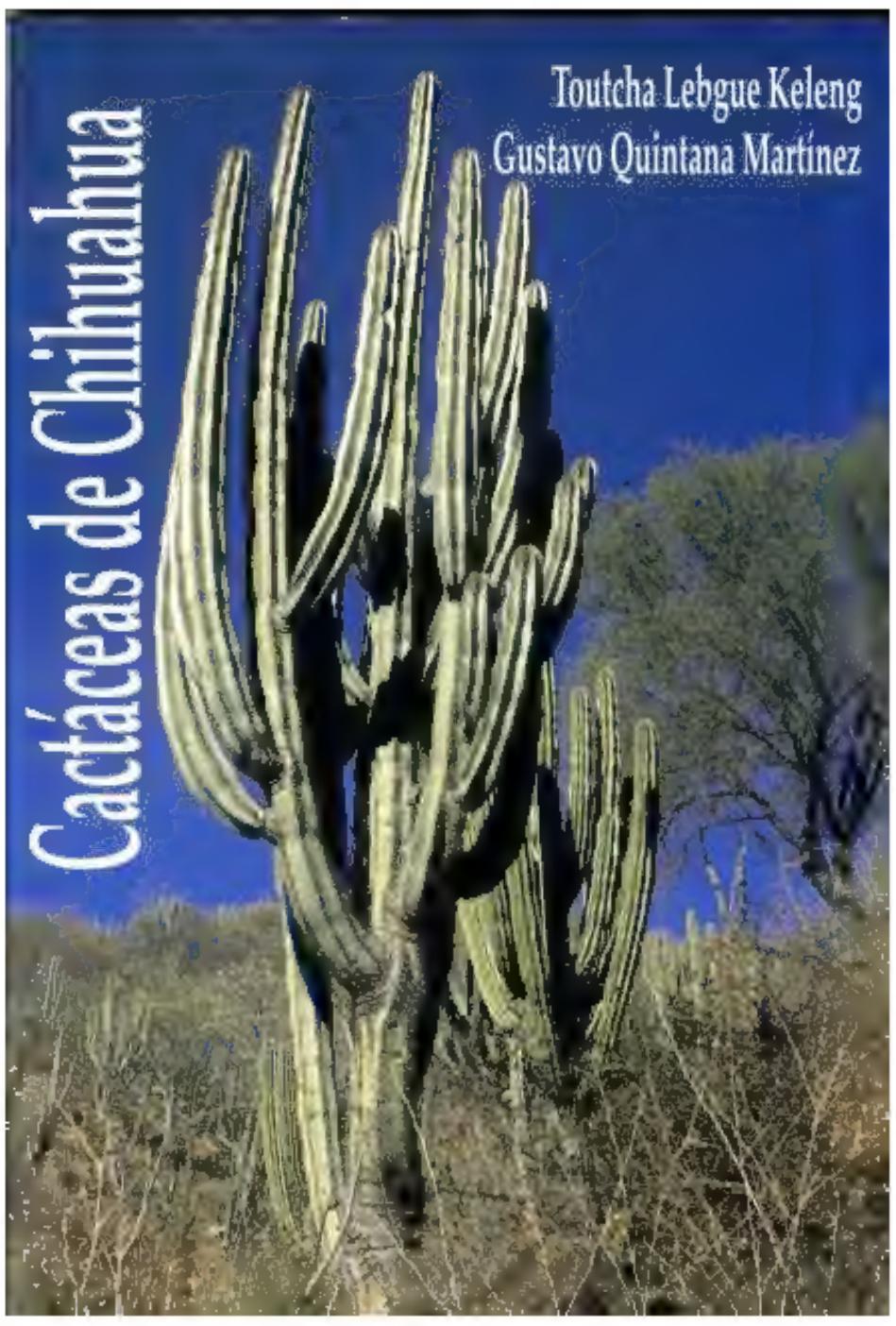
Spellenberg, R.W. 2013. Review: Lebgue Keleng and Quintana Martínez, "Cactáceas de Chihuahua." Phytoneuron 2013-89: 1–2. Published 22 November 2013. ISSN 2153 733X

Toutcha Lebgue Keleng and Gustavo Quintana Martínez. 2013. **Cactáceas de Chihuahua, 2nd ed.** (ISBN 978-607-7788-96-6), flexible plastic cover. In Spanish. Talleres Gráficos del Estado (Calle 4a. No. 3013, Col. Santa Rosa, Chihuahua, Chih.); 273 pp. $25.00 US. 131 color photographs. To order in the US send personal or cashier check in US dollars for $28 ($25 + $3 shipping) to Dr. Lebgue's son: Adil Lebgue, 904 6th Ave. SW, Faribault, MN 55021; book will be sent from Mexico. For queries, contact Dr. Lebgue at *tlebgue@uach.mx*; he assures that sending books from Mexico is not a problem. To order in Mexico contact Dr. Lebgue at above e-mail address.

Toutcha Lebgue Keleng and his colleague, Gustavo Quintana Martínez, both of the Facultad de Zootecnica y Ecologia, Universidad Autónoma de Chihuahua, have thoroughly revised this attractive and useful book, first published in 2010. One goal of the book is to raise awareness of species of conservation concern because of habitat destruction and/or poaching; rare species are noted. For the second edition they received help from David Ferguson, Albuquerque BioPark Botanical Garden (*Opuntia*), and Ad Konings (*Coryphantha, Echinocereus, Mammillaria*).



The improvements are notable and many. Several taxonomic adjustments have been made, distribution maps have been omitted to save space, 2/3 of the photographs have been replaced, usually with better ones, photographs are more vividly reproduced, and the index is very much easier to read. I miss the individual dot maps of the 1st ed., which showed the state with outlines of the *municipios* (like counties). Though not based on compilations from extensive herbarium searches, these maps did present a quick impression where one might encounter a species within the state. The *municipios*, of which there are 67 in Chihuahua, are listed in the section on distribution of a species, but this does not immediately allow the same understanding of distribution within Chihuahua as did the dot maps of the 1st edition.

The text is clearly presented and typos are very rare. The photograph of *Echinomastus unguispinus* is poorly reproduced and is overly blue, but the rest are fine. The photograph labelled as *Opuntia chlorotica* shows a plant that is seemingly 5 m high or more, whereas the description indicates a maximum height of 1.5 m. These minor problems aside, the book seems thorough. In a comparison of species included in the Cactaceae in the 1997 draft of "A Flora of the Chihuahuan Desert Region" by J. Henrickson and M.C. Johnston, only two species seem to have been missed by Lebgue and Quintana, *Opuntia bradtiana* and *Coryphantha henricksonii*, both said to barely enter the state in the SE corner. *Opuntia grahamii*, the form bearing this name widespread in Chihuahua, is not in the index but can be traced to a synonym in *O. schottii*.

Introductory pages review distribution of the Cactaceae and its morphological features. There is a section on habitat types, with photos. Then genera are presented alphabetically, as are species within genera. Each species treatment begins with the scientific name, often followed by a common name (contrived common names are not used). There is a good description, then a listing of the *municipios*

where the plant occurs, a brief description of habitat, including elevational range, and finally a paragraph on synonymy. At the end of the book there is a list of references and a thorough index.

Chihuahua is largest Mexican state, approximately the size of Wyoming. It is mostly Chihuahuan Desert in the eastern half, where most of the cacti occur, and grassland and forest in the montane western portion, with tropical forest on the lower western slopes of the Sierra Madre Occidental near the western border of the state. The cold dry winters limit cactus diversity in the interior; large arborescent cacti are found in the state only on the lower, western slopes of the Sierra. Within Chihuahua the authors recognize 17 genera and 109 species, with a number of infraspecific taxa. *Opuntia* is the largest genus, with 38 species, followed by *Mammillaria* (20), *Coryphantha* (15), and *Echinocereus* (14).

For those with an interest in the Cactaceae, or in the flora of southwestern North America, this informative, neatly presented, nicely written, thorough little book with many attractive photographs is an excellent addition to one's literature collection.

Richard Spellenberg
Department of Biology, MSC 3AF
New Mexico State University
Las Cruces, New Mexico 88003